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26304	7590	08/21/2007	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			KIM, DAVID S	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/783,882	KANO, SHINYA	
	<b>Examiner</b>	<b>Art Unit</b>	
	David S. Kim	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 17 April 2007.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-35 is/are pending in the application.  
 4a) Of the above claim(s) 7-14, 17, 19 and 28-31 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-6, 15, 16, 18, 20-27 and 32-35 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 19 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____                          |

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**DETAILED ACTION****Election/Restrictions**

1. Applicant's election ***without traverse*** of Species 1, the port number searching process employing the TestMsg, exemplified in the embodiments of Figs. 5 and 8, in the reply filed on 17 April 2007 is acknowledged. Applicant identified **claims 1-6, 15, 16, 18, and 20-27** as directed to Species 1. Examiner also agrees with this selection of claims. Accordingly, the merits of **claims 1-6, 15, 16, 18, and 20-27** are treated in this Office Action. New claims 32-35 are the same original claims 11, 13, 30, and 31, which were previously identified as generic claims. Accordingly, the merits of new **claims 32-35** are also treated in this Office Action. However, amended claims 11, 13, 30, and 31 now correspond to Fig. 7. The embodiment of Fig. 7 does not employ the TestMsg, so amended **claims 11, 13, 30, and 31**, and their dependent claims 12 and 14 are ***withdrawn***.
2. **Claims 7-14, 17, 19, and 28-31** are ***withdrawn*** from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made ***without traverse*** in the reply filed on 17 April 2007.

**Drawings**

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

**In claim 15**, "the first transmission unit transmits a plurality of control messages simultaneously" is not shown.

**In claims 16 and 18**, the "control message reception awaiting timer" is not shown.

**In claim 20**, the "link summary message" is not shown, and the situation regarding this "link summary message" is not shown.

**In claim 21**, the "errors" are not shown, and the situation regarding these "errors" is not shown.

4. **Figures 1-4C** should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

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5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

**Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. **Claims 1-6, 15, 16, 18, and 20-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent Application Publication No. 2002/0126625 A1, hereinafter "Liu") in view of Wetzel et al. (U.S. Patent Application Publication No. 2002/0126342 A1, hereinafter "Wetzel").

**Regarding claim 1,** Liu discloses:

An optical transmission system including:

a first optical transmission apparatus having a first optical switch (node α in Fig. 1); and  
a second optical transmission apparatus having a second optical switch (node β in Fig. 1),  
said optical transmission system being capable of setting a connection relation between the first optical transmission apparatus and the second optical transmission apparatus (e.g., paragraph [0004]),

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wherein

the first optical transmission apparatus includes:

a first transmission unit provided on an input side of the first optical switch (sender α in Fig. 1) configured to transmit a first control message including a transmission port number of a transmission port for transmitting the first control message (e.g., Fig. 5 and paragraph [0047]).

Liu does not expressly disclose:

wherein

the first optical transmission apparatus includes:

***a transmission port control unit*** configured to control the first optical switch so that the first control message is transmitted through different transmission ports sequentially.

However, Wetzel provides details for first and second transmission apparatuses (Wetzel, e.g., nodes 210 and 220 in Fig. 2), including ***a transmission port control unit*** (Wetzel, e.g., 214 in Fig. 2) configured to control the first optical switch so that the first control message is transmitted through different transmission ports sequentially (Wetzel, “each of the ports” in paragraph [0028]). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement such detailed teachings of Wetzel in the system of Liu. One of ordinary skill in the art would have been motivated to do this since Liu broadly discloses the use of an optical switch for connecting control messages to transmission ports (Liu, e.g., paragraph [0022]) and is relatively silent about the details for implementing this usage of the optical switch. These teachings of Wetzel speak into this silence with exemplary details for one of ordinary skill in the art to actually implement this system.

**Regarding claim 2,** Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein the second optical transmission apparatus includes:

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a first reception unit (Liu, receiver  $\beta$  in Fig. 1) provided on an output side of the second optical switch configured to receive the first control message (e.g., paragraphs [0024], [0028], [0032]); and

a reception port control unit (Wetzel, e.g., 224 in Fig. 2) configured to control the second optical switch so that the first control message is received by the first reception unit through different reception ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, "each of the ports" in paragraph [0029]).

**Regarding claim 3,** Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein the transmission port control unit controls the first optical switch so that the first control message is transmitted through different transmission ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, "each of the ports" in paragraph [0028]).

Liu in view of Wetzel does not expressly disclose:

The optical transmission system as claimed in claim 1, wherein the transmission port control unit controls the first optical switch so that the first control message is transmitted through different transmission ports sequentially ***and periodically.***

However, periodic operation is a well-known technique throughout the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation of periodic operation. One of ordinary skill in the art would have been motivated to do this to provide the well-known benefit of periodically monitoring the status of the system.

**Regarding claim 4,** Liu in view of Wetzel does not expressly disclose:

The optical transmission system as claimed in claim 2, wherein after receiving the first control message, the first reception unit controls the reception port control unit so as to receive the first control message next time through a reception port having a reception port number next to a present reception port number.

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However, this limitation corresponds to simply performing the connection discovery method of the prior art of record at the next reception port. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation in the system of the prior art of record. One of ordinary skill in the art would have been motivated to do this to perform the connection discovery method of the prior art of record for each reception port, so that all the connections may be discovered (Liu, paragraph [0018]).

**Regarding claim 5,** Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 2, wherein  
the first optical transmission apparatus further comprises a second reception unit (Liu, receiver α in Fig. 1) configured to receive a second control message (Liu, e.g., paragraphs [0026], [0030]) including the transmission port number (Liu, e.g., “1” in paragraphs [0026], [0030]) and a reception port number (Liu, e.g., “A” in paragraphs [0026], [0030]) of the second optical transmission apparatus for receiving the first control message.

Liu in view of Wetzel does not expressly disclose:

wherein

after the second reception unit receives the second control message, the first transmission unit transmits a control message as the first control message from a transmission port having a transmission port number next to the transmission port number included in the second control message, the next transmission port number being included in the control message transmitted by the first transmission unit as the first control message.

However, this limitation corresponds to simply performing the connection discovery method of the prior art of record at the next transmission port. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation in the system of the prior art of record. One of ordinary skill in the art would have been motivated to do this to perform the connection discovery method of the prior art of record for each transmission port, so that all the connections may be discovered (Liu, paragraph [0018]).

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**Regarding claim 6,** Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 5, wherein the second optical transmission apparatus further comprises a second transmission unit configured to transmit the second control message (Liu, sender β in Fig. 1),

wherein

the reception port control unit (Wetzel, e.g., 224 in Fig. 2) controls the second optical switch so that the first control message is received through different reception ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, “each of the ports” in paragraph [0029]).

Liu in view of Wetzel does not expressly disclose:

wherein

the reception port control unit controls the second optical switch so that the first control message is received through different reception ports sequentially ***and periodically.***

However, periodic operation is a well-known technique throughout the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation of periodic operation. One of ordinary skill in the art would have been motivated to do this to provide the well-known benefit of periodically monitoring the status of the system.

**Regarding claim 15,** Liu in view of Wetzel does not expressly disclose:

The optical transmission system as claimed in claim 1, wherein the first transmission unit transmits a plurality of control messages simultaneously.

However, consider the common practice of parallel operation. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement parallel operation of the connection discovery method of the prior art of record, i.e., parallel control messages being transmitted simultaneously. One of ordinary skill in the art would have been motivated to do this for common benefits of parallel operation, such as faster operation and higher efficiency of apparatus utilization.

**Regarding claim 16,** Liu in view of Wetzel does not expressly disclose:

The optical transmission system as claimed in claim 2, further comprising

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a control message reception waiting timer that starts to count the time when the first control message is received, and terminates after a predetermined time period,

wherein

when the control message reception waiting timer terminates, the reception port control unit controls the second optical switch so that the first control message is received through a different reception port.

However, Liu does imply the use of some kind of control message waiting timer (Liu, paragraphs [0036] and [0038]), though not specifically “to count the time when the first control message is received”. Still, this kind of timer is used for the common practice of a “time-out” indication, which is extremely well known throughout the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement this kind of timer “to count the time when the first control message is received”. One of ordinary skill in the art would have been motivated to do this to implement a “time-out” indication of an excessive period of time for waiting for the control message. Otherwise, one may wait for the control message indefinitely, thus slowing the connection discovery method of the prior art of record. Then, it would be obvious to control the second optical switch so that the first control message is received through a different reception port, which may be carrying the control message.

**Regarding claim 18**, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein the first optical transmission apparatus includes:

a first reception unit (Liu, receiver α in Fig. 1) configured to receive a second control message (Liu, e.g., paragraphs [0026], [0030]) including the transmission port number (Liu, e.g., “1” in paragraphs [0026], [0030]) and a reception port number (Liu, e.g., “A” in paragraphs [0026], [0030]) of a reception port of the second optical transmission apparatus for receiving the first control message; and

a control message reception waiting timer (Liu, paragraphs [0036] and [0038]) that starts to count the time when the second control message is received (Liu, paragraphs [0036] and

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[0038]), and terminates after a predetermined time period (Liu, paragraphs [0036] and [0038], such a timer generally terminates after the “certain amount of time”).

Liu in view of the Wetzel does not expressly disclose:

wherein

when the control message reception waiting timer terminates, the transmission port control unit controls the first optical switch so that the first control message is transmitted through a next transmission port, the next transmission port number being included in said transmitted first control message.

However, this limitation corresponds to simply performing the connection discovery method of the prior art of record at the next transmission port. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation in the system of the prior art of record. One of ordinary skill in the art would have been motivated to do this to perform the connection discovery method of the prior art of record for each transmission port, so that all the connections may be discovered (Liu, paragraph [0018]).

**Regarding claim 20**, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein  
a link summary message (e.g., Liu, paragraphs [0027] – [0034]) including a connection relation between the first optical transmission apparatus and the second optical transmission apparatus is exchanged therebetween.

Liu in view of Wetzel does not expressly disclose:

transmission ports and reception ports not in agreement or not recognized in the connection relation between the first optical transmission apparatus and the second optical transmission apparatus are used for searching for and setting the transmission port number and a reception port number.

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However, in the case that there are such ports, it would be obvious to search for and set the port numbers for these ports. One of ordinary skill in the art would have been motivated to do this so that the connections of these ports are known (Liu, paragraph [0018]).

**Regarding claim 21,** Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein when errors (Liu, e.g., paragraphs [0037] and [0038]) occur in transmission between the first optical transmission apparatus and the second optical transmission apparatus.

Liu in view of Wetzel does not expressly disclose:

transmission ports and reception ports related to the erroneous transmission are used for searching for and setting the transmission port number and a reception port number.

However, in the case that there are such ports, it would be obvious to search for and set the port numbers for these ports. One of ordinary skill in the art would have been motivated to do this so that the connections of these ports are known (Liu, paragraph [0018]).

**Regarding claims 22-26,** claims 22, 23, 24, 25, and 26 are claims that introduce limitations that correspond to the limitations introduced by claims 1, 3, 5, 2, and 4, respectively. Therefore, the recited limitations in claims 1-5 read on the corresponding limitations in claims 22-26.

**Regarding claim 27,** Liu in view of Wetzel discloses:

The optical transmission apparatus as claimed in claim 26, wherein the reception port control unit (Wetzel, e.g., 224 in Fig. 2) controls the optical switch so that the control message is received through different reception ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, “each of the ports” in paragraph [0029]).

Liu in view of Wetzel does not expressly disclose:

the reception port control unit controls the optical switch so that the control message is received through different reception ports sequentially ***and periodically.***

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However, periodic operation is a well-known technique throughout the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation of periodic operation. One of ordinary skill in the art would have been motivated to do this to provide the well-known benefit of periodically monitoring the status of the system.

8. **Claims 32-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Wetzel as applied to the claims above, and further in view of Bradford et al. (U.S. Patent No. 7,046,928 B1, hereinafter “Bradford”).

**Regarding claim 32**, claim 32 corresponds largely to claim 1. Therefore, the recited limitations in claim 1 read on the corresponding limitations in claim 32. Claim 32 also includes limitations absent from claim 1.

Regarding these limitations absent from claim 1, Liu in view of Wetzel discloses:

wherein the first optical transmission apparatus includes:

a test signal transmission unit provided on an input side of the first optical switch (sender α in Fig. 1) configured to transmit a test signal;

wherein

the test signal transmission unit transmits the test signal through different transmission ports sequentially (Liu, e.g., scanning in paragraph [0035]), separated by a predetermined time period (Liu, e.g., “speed” in paragraph [0035] suggests a predetermined rate, which suggests separations of a predetermined time period).

Liu in view of Wetzel does not expressly disclose:

a transmission unit configured to transmit a control message including a transmission port number of a transmission port for transmitting the test signal.

Rather, Liu discloses that the *test signal transmission unit* (Liu, sender α in Fig. 1) is configured to transmit a control message including a transmission port number of a transmission port for transmitting the test signal.

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However, Bradford discloses link discovery and verification through the use of a different transmission unit configured to transmit such a control message (Bradford, col. 5, l. 10-14). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ such teachings in the system of Liu in view of Wetzel. One of ordinary skill in the art would have been motivated to do this since they would “minimize the need for line termination resources to generate and interpret packets” (Bradford, col. 2, l. 33-48).

**Regarding claim 33,** claim 33 corresponds largely to claim 32. Therefore, the recited limitations in claim 32 read on the corresponding limitations in claim 33. Claim 33 also includes limitations absent from claim 32.

Regarding these limitations absent from claim 32, Liu in view of Wetzel and Bradford discloses: wherein

the first optical transmission apparatus includes:

a first reception unit (Liu, receiver α in Fig. 1; Bradford, receiver implied for “message” of col. 5, l. 47-51) configured to receive a second control message (Liu, e.g., paragraphs [0026], [0030]; Bradford, “message” of col. 5, l. 47-51) including the transmission port number (Liu, e.g., “1” in paragraphs [0026], [0030]; Bradford, col. 5, l. 49) and a reception port number (Liu, e.g., “A” in paragraphs [0026], [0030]; Bradford, col. 5, l. 49) of a reception port of the second optical transmission apparatus for receiving the test signal.

Liu in view of Wetzel and Bradford does not expressly disclose:

wherein

after the first reception unit receives the second control message, the test signal transmission unit transmits the test signal through a transmission port having a transmission port number next to the transmission port number included in the second control message.

However, this limitation corresponds to simply performing the connection discovery method of the prior art of record at the next transmission port. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation in the system of the prior art of

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record. One of ordinary skill in the art would have been motivated to do this to perform the connection discovery method of the prior art of record for each transmission port, so that all the connections may be discovered (Liu, paragraph [0018]).

**Regarding claims 34 and 35,** claims 34 and 35 are claims that introduce limitations that correspond to the limitations introduced by claims 32 and 33, respectively. Therefore, the recited limitations in claims 32 and 33 read on the corresponding limitations in claims 34 and 35.

**Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

King (U.S. Patent No. 4,916,444) is cited to show a method and apparatus for mapping communications media (Fig. 9), including optical fibers and optical beams (col. 11, l. 24-25).

King (U.S. Patent No. 5,296,850) is cited to show an apparatus and processes for mapping the connectivity of communications systems with multiple communication paths.

Ogawa (U.S. Patent No. 5,679,987) is cited to show a method and device for obtaining connectivity information of telecommunication facilities (Fig. 4).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK



KENNETH VANDERPUYE  
SUPERVISORY PATENT EXAMINER